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(54) ROLLING BEARING

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(57) Abstract:

PURPOSE: To obtain a rolling bearing excellent in durability, and unsusceptible to contamination by ambient environment even if it is used under conditions like vacuum, high moisture, and corrosive gas, by making either one of a roll surface and a rolling body of oxide group ceramics, and forming a carbon film containing amorphous carbon on the other surface.

CONSTITUTION: In a full type angular rolling bearing not using any cage, roll surfaces 3, 4 are respectively provided on the opposite surfaces of an inner race 1 and an outer race 2, and a plurality of balls 5 serving as rolling bodies are incorporated between the roll surfaces 3, 4. SiC films 6 as intermediate layers are formed on the obverses of respective roll surfaces 3, 4, and DLC films 7 are formed on the obverses of the SiC films 6. And the balls 5 are made of oxide group ceramics like Al_2O_3 , SiO_2 , ZrO_2 . Moreover, in place of this structure, the obverses of the balls 5 can be coated by the SiC film 6 and the DLC film 7, and the inner race 1 and the outer race 2 can be made of oxide group ceramics.

